

**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY**

WAG Acquisition, L.L.C.,

Plaintiff,

v.

Gattyán Group S.à r.l., *et al.*,

Defendants.

Civil Action No. 14-cv-02832 (ES) (MAH)

JURY TRIAL DEMANDED

DECLARATION OF KEITH J. TERUYA

I, Keith J. Teruya, declare as follows:

I understand that I am submitting a rebuttal declaration in connection with the above-referenced litigation concerning U.S. Patent Nos. 8,122,141 (the ““141 Patent”), 8,327,011 (the ““011 Patent”), 8,364,839 (the ““839 Patent”), and 8,185,611 (the ““611 Patent”) to Harold Price (collectively, the “Asserted Patents”), and in particular how a person of ordinary skill in the art (“POSITA”) would understand certain terms recited in the claims therein. I am being compensated for my work in this matter by WAG Acquisition, L.L.C. (“WAG”), at the rate of \$450.00 per hour, with reimbursement for actual expenses. I have no personal or financial stake or interest in the outcome of the above-referenced litigation. My compensation is not tied to the outcome of this matter, and not based on the substance of the opinions rendered here.

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I. BACKGROUND

1. I set forth my qualifications and status as an expert witness in my declaration dated January 7, 2021.

2. For this rebuttal declaration, I have considered the expert declaration of Dr. Schuyler Quackenbush, which was not dated, but which I understand was filed in the above-captioned litigation on January 7, 2021, as well as the following documents:

- a. Provisional Patent Application No. 60/231,997 (COMMON000000001-25);
- b. U.S. Patent No. 7,716,358 (COMMON000002298-2312) (“the ’358 Patent”);
- c. ’358 Patent Prosecution History (COMMON000002314-2540);
- d. U.S. Patent No. 8,122,141 (COMMON000002541-2554) (“the ’141 Patent”);
- e. ’141 Patent Prosecution History (COMMON000002556-2778);
- f. U.S. Patent No. 8,327,011 (COMMON000002779-2792) (“the ’011 Patent”);
- g. ’011 Patent Prosecution History from public PAIR;
- h. U.S. Patent No. 8,185,611 (COMMON000003956-3971) (“the ’611 Patent”);
- i. ’611 Patent Prosecution History from public PAIR;
- j. U.S. Patent No. 8,364,839 (COMMON000004258-4274) (“the ’839 Patent”);
- k. ’839 Patent Prosecution History from public PAIR;
- l. Defendant’s Local Patent Rule 4.2(a)-(c) Disclosures;
- m. Webcasting--the broadcasters’ perspective, F. Kozamernik (COMMON000011256-11283);
- n. Harold Price Deposition Transcript (COMMON000085022-85075);
- o. Skip Hansen Deposition Transcript (COMMON000084951-85021);
- p. Jack Moffitt Deposition Transcript (COMMON000169334-169406);

- q. WAG's Patent Owner Preliminary Response (COMMON000006518-
COMMON000006571);
- r. WAG's Patent Owner Preliminary Response (COMMON000041393-41421);
- s. Microsoft Computer Dictionary Fourth Edition (COMMON000168752-168776);
- t. The Oxford Dictionary (COMMON000168777-168797);
- u. U.S. Patent No. 5,822,524 to Chen;
- v. IEFT RFC 793, TCP Protocol Specification (COMMON000025541-25630);

3. In the following I address certain statements made by Dr. Quackenbush with which I disagree. This should not be understood to mean, however, that I agree with other statements made in Dr. Quackenbush's declaration that are not explicitly discussed herein.

II. CLAIM TERMS

A. “Media Data Elements”

4. As I explained in my earlier declaration, a POSITA knows that the transmission of data over the Internet is made via various logical “layers,” and that at the level of the transport layer data is likely encapsulated in one or more physical layer packets.

5. A POSITA would understand that someone developing streaming software as described in the patents-in-suit would be building an application on top of lower layers of the networking system, such as the transport layer, as is typical. The patents refer to using such lower-layer transport, state that it is assumed to exist, but that the workings of the lower layers themselves are “outside the scope of this invention.” *See, e.g.*, ’141 patent, 5:5-11. A POSITA would understand the invention to concern development at the application layer, relying on the services of lower lawyers, and would *not* understand the invention to be contemplating reaching into and modifying the workings of the transport layer.

6. Dr. Quackenbush's contention that the "media data elements" of the claims of these patents are "packets" very clearly confuses the application layer of the network stack as envisioned by these patents (indeed, as normally envisioned), with lower layers, such as the transport layer. This contention is fundamentally in error – indeed absurd – and, given his professed experience and accomplishments, Dr. Quackenbush should know better.

7. "Packets" are the currency of the "transport" and even lower network and data link layers. An application, such as a media server, or a media player, passes data (such as media data elements) to the transport layer, and it is the transport layer that takes this application-layer data and converts it into packets for transmission purposes. The formats and sizes of such packets are determined by the transport layer. The application layer, however, independently determines the formats and sizes of application data, which media data elements are.

8. The fact that media data elements are application-layer data, and thus distinct from transport layer packets, is made evident from the excerpts Dr. Quackenbush relies on in his declaration. For example, in paragraph 33 of his declaration, Dr. Quackenbush states that the '141 patent discloses, in column 5 from lines 5-11, that "[t]his invention presumes the existence of a data communications transport mechanism, such as the TCP protocol, for the reliable delivery of data in an ordered sequence from the source of the media data to the server, or from the server to the media player software of the user computer."

9. A POSITA would readily understand from this that the disclosure concerns not the transport layer (which is "presumed" and deals with packets internally), but instead concerns the actions at the application layer, which a POSITA knows determines its own structure of data, such as media data elements.

10. Similarly, in paragraph 39 of his declaration, Dr. Quackenbush notes that the patents disclose that “the system may buffer media data at the server for the purpose of packet assembly/disassembly.” This confirms the understanding that media data elements are something other than transport level packets. A POSITA would understand from this disclosure that media data elements are “disassembled” into packets for transmission by the transport layer, while incoming packets at the transport layer are “assembled” into media data elements. Hence, a POSITA would understand that “media data elements” are not packets, although packets are used to carry media data elements at the transport layer.

11. The Asserted Patents explain that, “[t]he server buffer ‘sends’ data by delivering it to the transport mechanism. The transport mechanism actually ‘sends’ the data across the communications medium, and has processes which determine if all the data that has been sent has been received by the destination.” ’141 Patent, 9:13; *see also* ’011 Patent, 5:63-6:2; ’839 Patent, 8:9-19; ’611 Patent, 8:9-19. A POSITA would recognize that “sending” in the context of the patents as explained by this excerpt, means the application layer sending media data elements to the transport layer. Consequently, a POSITA would know that it is improper to equate “media data elements” at the application layer with the packets used by the transport mechanism, since the transport mechanism is discussed as a process that is distinct from and used by the rest of the invention set forth in the disclosure of the Patents-in-Suit.

12. Dr. Quackenbush’s discussions of the patent disclosures as supporting his interpretation of media data elements as packets actually do not concern media data elements at all but instead are in the context of the underlying transport mechanism that the patents acknowledge is not within the scope of the invention.

13. For example, in paragraph 65 of his declaration, his quote here actually shows that media data elements are something other than packets: “for ‘formatting media data according to the requirements of buffer 14, and for digitizing, encoding, and packetizing the media data.’” The media data is in the form of media data elements, and clearly it gets packetized – that is, turned into packets. Hence, a POSITA would recognize from this that a media data element is different from a packet.

14. His quotes in paragraphs 66, 68, and 70 concern transport over the Internet generally and not media data elements specifically, while paragraph 67 concerns a request for a media data element and not the media data element itself. Hence, taken in their proper context, none of his citations to the patents in these paragraphs actually support the proposition that these patents view its media data elements as being packets.

B. “as said media player requires in order to maintain a sufficient number of media data elements in the media player for uninterrupted playback” - ’141 patent, claims 1 and 24

15. I disagree with Dr. Quackenbush that this term would be indefinite or unclear to a POSITA.

16. In paragraph 74 of his declaration, Dr. Quackenbush states that a POSITA “would not understand what that ‘sufficient number’ should be given that the claim language, the patent specification and the prosecution history provide no teaching of range of values for, or algorithms to determine a ‘sufficient number.’” In my opinion this is simply incorrect.

17. The claim language states clearly on its face what a “sufficient number of media data elements” is: a number sufficient “for uninterrupted playback.” It means that number or more. How much more is immaterial. This describes a very clear standard against which a POSITA can measure and thus there is no indeterminacy to a POSITA by what is meant by this term or in evaluating whether or not it is met.

18. This understanding is confirmed by the quotations from Mr. Price, the inventor of the Patents-in-Suit, that Dr. Quackenbush relies upon in paragraph 77 of his declaration. As explained by Mr. Price in the excerpt set forth therein, a POSITA would know that “sufficient” is the number “[w]hen you don’t have any dropouts.” Moreover, Mr. Price then gives examples of things a POSITA would consider to determine what would be a sufficient amount to achieve this result, including the considering the device itself, the playback speed, and the kind of media that being sent.

19. A POSITA would know that the size of the buffer during streaming reception and playback corresponds to how much of a margin (indeed “buffer”) exists to avoid a dropout in the event of a network problem or slowdown. The POSITA would design buffer replenishment to maintain a sufficient margin to withstand the expected duration and severity of a dropout or slowdown, given the history and type/quality of the user’s connection, and weigh this against the time shifting (not the same as startup delay), which goes with having a buffer. The balance to be struck is a routine design choice, in material respects not unlike a driver establishing a policy of when to stop for gas – an everyday determination that ordinary people do not consider “indefinite.”

20. Thus, in my opinion, the term “as said media player requires in order to maintain a sufficient number of media data elements in the media player for uninterrupted playback” would not be indefinite to a POSITA.

C. The “Sending” Limitation - ’611 Patent, claims 1, 3, 8, 9, 14, and 15, and ’839 Patent, claim 1

21. According to Dr. Quackenbush, a POSITA would not know what it means to send initial streaming media data elements to the user system faster than the playback rate, in which the initial streaming media data elements are configured so that the amount of the initial media

data elements, and the initial sending rate, are sufficient for the user system to begin playing back the streaming media while the user buffer continues to fill. I disagree.

22. As Dr. Quackenbush recognizes in paragraph 81 of his declaration, the “sending” limitation “requires that (1) ‘the amount of said initial elements’ and (2) ‘said initial sending rate’ are set by the server such that they are ‘sufficient’ for the user system (a) to begin playing, (b) while the user buffer continues to fill.”

23. There is nothing about these requirements that would pose a determinacy problem for a POSITA. Like the limitation discussed earlier, this limitation provides clear direction as to what is required. Each of these requirements, (a) enough media data elements to begin playing (b) while the user buffer continues to fill, are each easily determinable by a POSITA.

24. The ’611 patent tells us, at 7:55-58, that “media data is sent to the user computer at a rate faster than the playback rate, which may be the highest rate that the data connection between the server and the user computer will support.” For example, for video, as soon as the stream contains an I-frame (a relatively large frame), and given that the initial transmission while the user buffer continues to fill is faster than the playback rate, a POSITA would expect that the player could begin playback without risk of loss. All the designer need do is dial in the degree of safety margin for beginning playback that is deemed desirable on top of the initial I-frame, in case there is any network jitter during this limited startup period.

D. Computer program/Routine/Software

25. Dr. Quackenbush takes the expedient of attacking the terms “computer program,” “routine,” and “software” standing alone, as not conveying any structure. His approach is misdirected, however, as the structure behind such terms is in the underlying functions that the “computer program,” “routine,” or “software” perform, and these functions are clearly recited in the claims. Hence, the claims themselves recite the underlying structure.

26. For example, claim 1 of the '141 patent recites "software being programmed to cause the media player to maintain a record of the identifier of the last data element that has been received; and to transmit requests to the server to send one or more data elements, specifying the identifiers of the data elements, as said media player requires in order to maintain a sufficient number of media data elements in the media player for uninterrupted playback." '141 patent, 13:37-44.

27. The structure behind the claimed "software" is the recited steps, which include: (a) maintaining a record of the identifier of the last data element that has been received; (b) transmitting requests to the server to send one or more data elements, specifying the identifiers of the data elements, (c) as the media player requires in order to maintain a sufficient number of media data elements in the media player for uninterrupted playback.

28. As I discussed above, step (c) is easily determinable by a POSITA, and a POSITA would immediately understand that the condition of step (c) indicates when steps (a) and (b) should be performed.

29. APOSITA would know how to implement steps (a) and (b). For example, the concept of maintaining a record of the identifier of an element that was last received requires no more than maintaining a variable in memory. Similarly, A POSITA understands that steps such as requesting of elements by their identifiers from a web server (for example) is a matter of making a GET request. Hence, this claim language provides adequate structure for a POSITA to envision and understand the individual steps that are claimed.

30. Claim 24 of the '141 patent has similar language, but uses the term "routine" rather than "software" or "computer program." A POSITA knows that these terms are interrelated, and like claim 1 of the '141 patent, the claim wording goes on to recite specific

steps to be performed by the routine, such as maintaining a record of the serial identifier of the last element received, and one that requests the next sequential elements as needed to maintain a specified buffer level on the player. These specific operational details impart structure beyond the recitation of a naked, generic “routine.” *E.g.*, ’141 patent, 8:35-9:12.

31. The ’011 patent recites a corresponding process, but cast from the point of view of the user media player making the requests for the media data elements. For example, claim 1 of the ’011 patent recites “instructions to cause the media player to transmit to the media source a request to send one or more media data elements, each identified by a serial number, and to repeat transmitting the requests to the media source for sequential media data elements so as to maintain the predetermined number of media data elements in the player buffer until the last media data element comprising the program has been received.” ’011 patent, 14:8-15.

32. Like the ’141 patent, a POSITA would recognize the structure behind the claimed “instructions” to be the recited steps, which include: (a) transmitting to the media source a request to send one or more media data elements, each identified by a serial number, and (b) to repeat transmitting the requests to the media source for sequential media data elements so as to (c) maintain the predetermined number of media data elements in the player buffer until (d) the last media data element comprising the program has been received. These again are specific operational steps, and impart structure to the claim itself.

33. Each of steps (a)-(d) reflect the teachings of the specification, in steps readily understandable to and reproducible by a POSITA, including monitoring the buffer level and making GET requests when needed based on the encoding, the playback rate, amount of time (in both directions) estimated to be required to fulfill the request, and the amount of cushion (buffer) desired. Steps (a)-(c) are discussed above. Step (d) quite clearly means to stop when done.

34. In paragraph 97 of his declaration, Dr. Quackenbush states that “predetermined” means “the ‘predetermined’ number of media data elements would be determined prior to the connection to the network and to the media source.” He does not offer an explanation for such a limiting interpretation and I disagree that a POSITA would come to this conclusion. To the contrary, as Dr. Quackenbush noted in paragraph 77 of his declaration quoting from Mr. Price, certain factors may be considered when determining the sufficiency of the number of media data elements for playback purposes, including the type of device, the playback speed, and the type of media being played. Some of these factors may only be known after connecting to the media source (such as media type). Hence, a POSITA would understand that the “predetermined” number of media data elements could be determined after connection to the network and after connection to the media source.

35. Claim 4 of the ’011 patent, as noted by Dr. Quackenbush in paragraph 103 of his declaration, recites “the instructions … further causes the media player to receive the predetermined number of media data elements at a rate more rapid than the rate at which the media data elements are to be played out by the media player.” ’011 patent, 14:20-26.

36. I disagree with Dr. Quackenbush that this term has no corresponding structure. The corresponding structure for the “instructions” is “receiv[ing] the predetermined number of media data elements at a rate more rapid than the rate at which the media data elements are to be played out by the media player,” which a POSITA would recognize. To do this, the POSITA need only send requests to a server capable of sending the requested media data elements faster than the playback rate, and to be able to receive them faster than the playback rate. By timing its own requests, knowing that they will be individually sent and received faster than the playback rate, the player can assure both quick startup and uninterrupted playback.

37. A POSITA would know that this structure means a program at the application layer, that is, the media player, receives the media data elements from the transport layer at a rate more rapid than the rate at which the media data elements are to be played out by the media player. Just as the patents disclose that the “server buffer ‘sends’ data by delivering it to the transport mechanism” ('011 patent, 5:65-66), a POSITA would know that the media player application “receives” media data elements by requesting them from the transport mechanism. Hence, a POSITA would readily understand and recognize that by a simple calculation of how to time the requests, it can ensure that data will be coming in rapidly enough for a fast startup and sustained playback. A POSITA would thus recognize this claim term as providing adequate structure.

38. As for claims 8 and 14 of the '611 patent that recite “a [] routine containing instructions to cause the server to send initial streaming media elements to the user system at an initial sending rate more rapid than the playback rate, to fill the user buffer,” and claims 9 and 15 of the '611 patent that recite instructions or a routine that are/is “operable, if the server has determined that delivery has been interrupted, to send streaming media elements to the user system at a sending rate more rapid than the playback rate, to fill the user buffer,” I disagree with Dr. Quackenbush that these limitations are indefinite for similar reasons as discussed above: the structure is apparent to a POSITA in the algorithm recited directly in the claim language itself.

39. For claims 8 and 14, this algorithm is “send initial streaming media elements to the user system at an initial sending rate more rapid than the playback rate,” which a POSITA would know how to do by simply providing the media data elements to the transport mechanism faster than the playback rate – indeed, as fast as the transport mechanism will allow.

40. Similarly, for claims 9 and 15 the algorithm is, upon “determin[ing] that delivery has been interrupted, [] send[ing] streaming media elements to the user system at a sending rate more rapid than the playback rate, to fill the user buffer,” which a POSITA would know how to do just as with claims 8 and 14 – sending unsent media data elements to the user as fast as the transport mechanism will allow, and which is also discussed in the specification. *See* ’611 patent, 10:24-33.

41. It is also incorrect to assert that any construction of “to fill the user buffer” other than “the user buffer is filled to capacity” is indefinite. This is contrary to the plain language of this term, which a POSITA would recognize, and is also refuted by the specification, which a POSITA would also recognize.

42. A POSITA would recognize that “to fill the user buffer” can encompass both the action of filling the user buffer as well as causing the user buffer to become full. However, a POSITA would recognize that the first reading more naturally aligns with the specification. In particular, 9:34-43 of the ’611 patent discloses the following:

Since the connection from the Internet to the user is faster than that required for media playback, audio/video data is transmitted from the server faster than it is played out by the user system, thus building up audio/video data in the user buffer. For example, if the user’s connection to the Internet is at 56,000 bits per second, and the data rate encoded for the media to be played is 24,000 bits per second, the buffer level of the user buffer 20 will fill at the rate of 32,000 bits per second (56,000 bits per second receive rate, minus 24,000 bits per second playout depletion rate).

43. In other words, the patent clearly contemplates that the buffer is being depleted while being filled. A POSITA would understand from this that the user need not be “filled to capacity” by the initial media data elements as suggested by Dr. Quackenbush – particularly in

the case where the server buffer and user buffer have the same size, as discussed at 9:44-55 in the '611 patent.

III. CONCLUSION

44. This declaration represents only those opinions I have formed to date. I reserve the right to revise, supplement, and/or amend my opinions stated herein based on new information and on my continuing analysis of the materials produced in this litigation.

45. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statement and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

46. I declare under penalty of perjury that the foregoing is true and correct.

Executed at McMinnville, OR on February 11, 2021.



KEITH J. TERUYA